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PATENT APPLICATION

ATTORNEY DOCKET NO. 200300594-1

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Zhichen Xu et al.

Confirmation No.: 8618

Application No.: 10/666,677

Examiner: Etienne Pierre Leroux

Filing Date: September 22, 2003

Group Art Unit: 2161

Title: SEMANTIC FILE SYSTEM

Mail Stop Appeal Brief-Patents
Commissioner For Patents
PO Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on October 23, 2008.

☒ The fee for filing this Appeal Brief is $540.00 (37 CFR 41.20).

☐ No Additional Fee Required.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

☐ (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d)) for the total number of months checked below:

☐ 1st Month $130	☐ 2nd Month $490	☐ 3rd Month $1110	☐ 4th Month $1730

☐ The extension fee has already been filed in this application.

☒ (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account 08-2025 the sum of $ 540. At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees.

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Date of facsimile: December 22, 2008
Typed Name: Carly Manhava
Signature:

Respectfully submitted,
Zhichen Xu et al.
By
Ashok Mannava
Attorney/Agent for Applicant(s)
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Rev 10/05(ApBrief)

Total number of pages: 30

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Attorney Docket No.: 200300594-1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s):	Zhichen Xu	**Confirmation No.:**	8618
Serial No.:	10/666,577	**Examiner:**	Etienne Pierre Leroux
Filed:	September 22, 2003	**Group Art Unit:**	2161

Title: SEMANTIC FILE SYSTEM

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APPEAL BRIEF - PATENTS

Sir:

This is an Appeal Brief in connection with the decisions of the Examiner in a Final Office Action mailed July 23, 2008, and in connection with the Notice of Appeal filed October 24, 2008. It is respectfully submitted that the present application has been more than twice rejected. Each of the topics required in an Appeal Brief and a Table of Contents are presented herewith and labeled appropriately.

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PATENT

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App. Ser. No.: 10/928,188

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(1) Real Party in Interest

The real party in interest is Hewlett-Packard Development Company, L.P.

(2) Related Appeals and Interferences

The Appellant is unaware of any appeals or interferences related to this case.

(3) Status of Claims

Claims 1, 4, 6-21, 23-35, 40, 41 and 43-45 are pending in the present application of which claims 1, 20, 40 are independent. Claims 1, 4, 6-21, 23-35, 40, 41 and 43-45 are all rejected and are all appealed. Claims 2, 3, 5, 22, 36-39 and 42 are canceled.

(4) Status of Amendments

No amendment was filed subsequent to the Final Office Action dated July 23, 2008.

(5) Summary of Claimed Subject Matter

Support for independent claims 1. 20, and 40 and dependent claims 15 and 31 is at least found in the following cited passages and figures of the present application.

Claim 1. A data model representing semantic information associated with objects stored in a file system, the data model comprising:

a first object identifier identifying a first object stored in the file system, wherein the first object comprises a first file stored in the file system; See page 5, line 24-page 6, line 21, and page 9, line 15-page 10, line 10.

a second object identifier identifying a second object stored in the file system, the second object being related to the first object, wherein the second object comprises at least one of, See page 5, line 24-page 6, line 21, and page 9, line 15-page 10, line 10.

a second file generated from the first file, and See page 5, line 24-page 6, line 21, and page 9, line 15-page 10, line 10.

meta data generated from the first file; and See page 5, line 24-page 6, line 21, and page 9, line 15-page 10, line 10.

a relation identifier identifying a relationship between the first object and the second object, wherein the data model includes a tuple in a format and order comprising the first object identifier, the relation identifier, the second object identifier. See page 5, line 24-page 6, line 21, and page 9, line 15-page 10, line 10.

Claim 15. The data model of claim 1, wherein the relation identifier identifies the second object as including context semantic information for the first object, the context semantic information being associated with access patterns for the first object. See page 5, line 6 and page 12, lines 1-7.

Claim 20. A method associated with a file system, the method comprising:

storing objects in the file system including a first object and a second object, wherein the first object is related to the second object; See page 21, line 1-page 23, line 25, and figures 4-8.

storing a relation meta data identifying a relationship between the first object and the second object, wherein the relationship is represented by a data model including a first identifier identifying the first object; a second identifier identifying the second object; and a relation identifier identifying the relationship between the first object and the second object; See page 21, line 1-page 23, line 25, and figures 4-8.

determining whether the first object in the file system is accessed; See page 21, line 1-page 23, line 25, and figures 4-8.

identifying a predetermined condition associated with the first object in response to the first object being accessed; and See page 21, line 1-page 23, line 25, and figures 4-8.

performing an action in response to the predetermined condition existing, wherein the relation identifier identifies the predetermined condition and the action. See page 21, line 1-page 23, line 25, and figures 4-8.

Claim 31. The method of claim 30, wherein the semantic information includes one or more types of semantic information comprising content-based semantic information related to the contents of files stored in the file system, context-based semantic information related to user access patterns of the files stored in the file system, and property semantic information related to

statistics or descriptions of the files stored in the file system. See page 5, lines 1-10 and page 12, lines 1-7.

Claim 40. A file system, comprising:

storage means for storing a plurality of files, semantic information for the plurality of files and relation meta data identifying relationships between one or more of at least some of the plurality of files and between the plurality of files and the semantic information, wherein See storage device 908 in figure 9.

a data model represents the relationships and the data model comprises a first object identifier identifying a first object wherein the first object includes a file of the plurality of files, a second object identifier identifying a second object wherein the second object includes one of a second file of the plurality of files and semantic information for the first file, and a relation identifier identifying a relationship of the relationships between the first object and the second object; See page 5, line 24-page 6, line 21, and page 9, line 15-page 10, line 10.

wherein the system further comprising event means for determining whether a file of the plurality of files is accessed, identifying a predetermined condition associated with the file, and performing an action in response to the predetermined condition existing. Event module 252, see page 15, line 24, page 16, line 10.

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(6) Grounds of Rejection to be Reviewed on Appeal

A. Claim 1 is rejected under 35 U.S.C. §112, second paragraph.

B. Claims 1, 4, 6-10, 12-21, 23-35, 40, 41 and 43-45 are rejected under 35 U.S.C. §102, being anticipated by Pub No. US2003.0145306 (Melahn et al), referred to as Melahn.

C. Claim 11 is rejected under 35 U.S.C. §103(a) as being unpatentable over Melahn as applied to claim 9 above, and further in view of Pub No. US 2003/00335900 (Leherbauer), referred to as Leherbauer.

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(7) **Arguments**

A. The rejection of claims 1 under 35 U.S.C. §112 2nd paragraph should be reversed because claim 1 is clear and definite.

Claim 1 was rejected under 35 U.S.C. §112 2nd paragraph because "tuple" recited in claim 1 is allegedly indefinite. The claimed tuple is described in the specification on page 5, line 24-page 6, line 21, and page 9, line 15-page 10, line 10. Also, claim 1 recites, "wherein the data model includes a tuple in a format and order comprising the first object identifier, the relation identifier, the second object identifier." Thus, the tuple is an ordered set of elements (i.e., in a the first object identifier, the relation identifier, the second object identifier) in a data model. There is nothing indefinite or unclear about "tuple" in claim 1. Tuple is clearly described in the claim and the specification.

The rejection alleges "tuple" as recited in claim 1 means statement, but the accepted meaning of tuple is "a row which includes a set of related values, one for each column in a relational database management system". The Examiner cites to the Microsoft Computer Dictionary, Fifth edition as support for this definition of "tuple".

Firstly, "tuple" as recited in claim 1 is not indefinite. The claim language clearly describes tuple to be in an order and format comprising the first object identifier, the relation identifier, the second object identifier. There is nothing unclear or indefinite about this claim language. This claim language clearly describes the features of the data model.

Secondly, the Examiner is applying this 112 rejection in an attempt to support his interpretation of the claimed "tuple", all be it an unreasonable interpretation of the claimed

"tuple". The disagreement between the Applicants and the Examiner regarding whether the Examiner's claim interpretation is unreasonable does not make the claimed term indefinite. Instead, this disagreement is concerning whether the Examiner's interpretation is unreasonable. The claim language clearly describes what the tuple is in definite terms. The disagreement concerning the Examiner's interpretation is addressed in the prior art rejections.

For at least these reasons, claim 1 is believed to be definite, and the rejection of claims 1 under 35 U.S.C. 112, second paragraph should be reversed.

B. The rejection of claims 1, 4, 6-10, 12-21, 23-35, 40, 41 and 43-45 under 35 U.S.C. §102 as being anticipated by Melahn should be reversed for failure to teach all the claimed features.

The test for determining if a reference anticipates a claim, for purposes of a rejection under 35 U.S.C. § 102, is whether the reference discloses all the elements of the claimed combination, or the mechanical equivalents thereof functioning in substantially the same way to produce substantially the same results. As noted by the Court of Appeals for the Federal Circuit in *Lindemann Maschinenfabrick GmbH v. American Hoist and Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984), in evaluating the sufficiency of an anticipation rejection under 35 U.S.C. § 102, the Court stated:

> Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim.

Therefore, if the cited reference does not disclose each and every element of the claimed invention, then the cited reference fails to anticipate the claimed invention and, thus, the claimed invention is distinguishable over the cited reference.

Claims 1, 4, 6-10, 12-21, 23-35, 40, 41 and 43-45 were rejected under 35 U.S.C. § 102(a) as allegedly being anticipated by Melahn.

Independent claim 1

Melahn fails to teach a data model including a tuple in a format and order comprising the first object identifier, the relation identifier, the second object identifier, as recited in claim 1. The rejection of claim 1 alleges the claimed first object identifier is a source file stored in a repository described in paragraph 18 of Melahn; the claimed second object identifier is a target file built from the source file as described in paragraph 18 of Melahn; and the claimed relation identifier identifying a relationship between the first object and the second object is step 164 of Melahn. Step 164 is described in paragraph 44 of Melahn, which discloses comparing time stamps of a host source file and a repository source file. If the host source file is not up-to-date with the repository source file, based on the timestamp comparison, the host source file is rebuilt.

The source files of Melahn are not first and second object identifiers, such as recited in claim 1. Instead, the source files of Melahn are files. The source files of Melahn may have file names. However, the file names are not provided in an ordered tuple in a data model, wherein the tuple is in the order comprising the first object identifier, the relation identifier, the second object identifier. Instead, the file names of the source files of Melahn would be provided in the

host file repository and the source file repository, respectively, but would not be provided in the claimed tuple in a data model. Furthermore, step 164 of Melahn is simply a step in a method. It is not a relation identifier in a tuple in a data model. Thus, Melahn fails to teach a tuple in a format and order comprising the first object identifier, the relation identifier, the second object identifier, as recited in claim 1.

On pages 8-12 of the Final Office Action, the Examiner argues the claimed "tuple" should be interpreted as a conditional statement, and thus the claimed "tuple" is taught by step 164 of Melahn. The Examiner asserts that the Applicants have described "tuple" in a manner contradictory to its accepted meaning, and that the description in the specification on page 15, line 24-page 16, line 17, supports the Examiner's interpretation of tuple to be a statement in a computer program (See page 10 of the Final Office Action).

Firstly, claim 1 recites a tuple in a data model. Claim 1 does not recite a statement in a computer program.

Secondly, page 15, line 24-page 16, line 17 of the Applicants' specification describes an event module 252, rather than the claimed data model. This passage of the Applicants' specification discloses that the event module 252 may use an event including an ordered list of <precondition: action> tuples that may be used with dependent files or other related files to identify a predetermined condition or set of conditions that must exist prior to performing the stated action.

The Examiner's interpretation that that the claimed tuple is a precondition:action tuple is unreasonable, because this passage of the Applicants' specification (*i.e.*, page 15, line 24-page

16, line 17) is referring to the event module 252 and not the claimed data model. The Examiner conveniently ignores the description of the claimed data model in the Applicants' specification on page 5, line 24-page 6, line 21, and page 9, line 15-page 10, line 10, which clearly describes the data model and tuple. The Examiner applies the definition of tuple from the Microsoft Dictionary, Fifth Edition as support that the Applicant is using "tuple" contrary to its accepted meaning. However, "Merriam-Webster Online Dictionary", as provided in the attached Evidence Appendix, defines tuple as a set of ordered elements, which is consistent with the description of tuple in the Applicants' specification and the description of tuple in claim 1. Thus, Applicants' use of "tuple" is consistent with its accepted meaning. Furthermore, the Examiner's definition of "tuple" from the Microsoft Dictionary describes a row in a relational database. This definition is specific to databases. The claim recites a data model and not a relational database. Thus, the "Merriam-Webster Online Dictionary" is the correct definition to apply and is also consistent with the Applicants' specification.

For at least these reasons, the Examiner's interpretation that the claimed tuple is simply a precondition:action statement in a computer program is unreasonable, and thus, Melahn fails to teach a data model including a tuple in a format and order comprising the first object identifier, the relation identifier, the second object identifier, as recited in claim 1.

Independent claims 20 and 40

Claim 20 recites, *inter alia*,

> "storing a relation meta data identifying a relationship between the first object and the second object, wherein the relationship is represented by a data model including a first identifier identifying the first object; a second identifier identifying the second object; and a relation identifier identifying the relationship between the first object and the second object."

Claim 40 recites, *inter alia*,

> "a data model represents the relationships and the data model comprises a first object identifier identifying a first object wherein the first object includes a file of the plurality of files, a second object identifier identifying a second object wherein the second object includes one of a second file of the plurality of files and semantic information for the first file, and a relation identifier identifying a relationship of the relationships between the first object and the second object."

As discussed above with respect to claim 1, Melahn et al. fails to disclose any statement or relation meta data identifying a relationship between the first object and the second object. On page 10 of the Final Office Action, the Examiner asserts the claimed relationship identifier is in a statement in a computer program. A computer program is not stored meta data or a data model. Also, as described above with respect to claim 1, Melahn fails to teach a data model including a first identifier identifying the first object; a second identifier identifying the second object; and a relation identifier identifying the relationship between the first object and the second object.

Dependent claims 15 and 31

Claim 15 recites, *inter alia*, a relation identifier in a data model including context or context-based semantic information that is "being associated with access patterns for the first object." Claim 31 recites similar features. The Final Office Action cited to paragraph [0030] in

According to the Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in view of *KSR International Co. v. Teleflex Inc.*, Federal Register, Vol. 72, No. 195, 57526, 57529 (October 10, 2007), once the *Graham* factual inquiries are resolved, there must be a determination of whether the claimed invention would have been obvious to one of ordinary skill in the art based on any one of the following proper rationales:

> (A) Combining prior art elements according to known methods to yield predictable results; (B) Simple substitution of one known element for another to obtain predictable results; (C) Use of known technique to improve similar devices (methods, or products) in the same way; (D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results; (E) "Obvious to try"—choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; (F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art; (G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention. *KSR International Co. v. Teleflex Inc.*, 550 U.S._, 82 USPQ2d 1385 (2007).

Furthermore, as set forth in *KSR International Co. v. Teleflex Inc.*, quoting from *In re Kahn*, 441 F. 3d 977, 988 (CA Fed. 2006), "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasonings with some rational underpinning to support the legal conclusion of obviousness."

Furthermore, as set forth in MPEP 2143.03, to ascertain the differences between the prior art and the claims at issue, "[a]ll claim limitations must be considered" because "all words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385.

The rejection of claim 11 should be reversed at least for the reason the rejection of its corresponding independent claim should be reversed. Leherbauer fails to cure the deficient teachings of Melahn.

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(8) Conclusion

For at least the reasons given above, the rejection of claims 1-43 described above and the objection to the Abstract described above should be reversed and these claims allowed.

Please grant any required extensions of time and charge any fees due in connection with this Appeal Brief to deposit account no. 08-2025.

Respectfully submitted,

Dated: December 22, 2008 By

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(9) Claim Appendix

1. (Previously Presented) A data model representing semantic information associated with objects stored in a file system, the data model comprising:

a first object identifier identifying a first object stored in the file system, wherein the first object comprises a first file stored in the file system;

a second object identifier identifying a second object stored in the file system, the second object being related to the first object, wherein the second object comprises at least one of,

a second file generated from the first file, and

meta data generated from the first file; and

a relation identifier identifying a relationship between the first object and the second object, wherein the data model includes a tuple in a format and order comprising the first object identifier, the relation identifier, the second object identifier.

2-3. (Canceled).

4. (Previously Presented) The data model of claim 1, wherein the relation identifier is a semantic of the first file.

5. (Canceled).

6. (Original) The data model of claim 1, wherein the relation identifier comprises a property of the first object and the second object comprises a value of the property for the first object.

7. (Original) The data model of claim 1, wherein the data model represents a function operable to be performed in the semantic file system.

8. (Original) The data model of claim 7, wherein the function is associated with one or more of generating a view of the objects stored in the semantic file system, restricting access to an object in the file system, searching in the semantic file system, performing an action based on at least one predetermined condition, and performing archival functions in the semantic file system.

9. (Original) The data model of claim 1; wherein the relation identifier identifies a dependency between the first object and the second object.

10. (Original) The data model of claim 9, wherein the dependency is associated with version information for the first object.

11. (Original) The data model of claim 9, wherein the dependency is associated with a hierarchal file space.

12. (Original) The data model of claim 9, wherein the dependency is associated with one or more users or one or more applications.

13. (Original) The data model of claim 12, wherein the dependency is used to generate file space views for the one or more users or for the one or more applications.

14. (Previously Presented) The data model of claim 1, wherein the relation identifier identifies the second object as including property semantic information for the first object, the property semantic information including statistical information for the first object.

15. (Original) The data model of claim 1, wherein the relation identifier identifies the second object as including context semantic information for the first object, the context semantic information being associated with access patterns for the first object.

16. (Original) The data model of claim 15, wherein the first object is a file and the access patterns are associated with one or more other files accessed before or after the file.

17. (Original) The data model of claim 1, wherein the relation identifier identifies the second object as including content-based semantic information associated with contents of the first object.

18. (Original) The data model of claim 1, wherein the data model is used to represent multiple types of relation identifiers in a schema.

19. (Original) The data model of claim 18, wherein the schema is modifiable to include a new relation identifier or to remove a relation identifier currently in the schema.

20. (Previously Presented) A method associated with a file system, the method comprising:

storing objects in the file system including a first object and a second object, wherein the first object is related to the second object;

storing a relation meta data identifying a relationship between the first object and the second object, wherein the relationship is represented by a data model including a first identifier identifying the first object; a second identifier identifying the second object; and a relation identifier identifying the relationship between the first object and the second object;

determining whether the first object in the file system is accessed;

identifying a predetermined condition associated with the first object in response to the first object being accessed; and

performing an action in response to the predetermined condition existing, wherein the relation identifier identifies the predetermined condition and the action.

21. (Original) The method of claim 20, wherein the first object includes a first file stored in the file system and the second object includes one or more of a second file stored in the file system and semantic information for the first file.

22. (Canceled).

23. (Original) The method of claim 20, further comprising:

determining a user-related or application-related dependency between the first object and the second object;

generating a view of the file system based on the dependency.

24. (Original) The method of claim 20, further comprising:

executing a query of the stored objects; and

generating a file space view from search results of the executed query.

25. (Original) The method of claim 20, further comprising:

generating a schema using a plurality of relation meta data, the plurality of relation meta data identifying relationships between one or more of the objects.

26. (Original) The method of claim 25, wherein the schema is modifiable by adding or removing relation meta data from the schema.

27. (Original) The method of claim 25, wherein at least one of the plurality of relation meta data is determined through property inheritance for the schema.

28. (Original) The method of claim 20, further comprising:

identifying a restriction on accessing the first object from the relation, wherein the first object is a file and the second object identifies one or more of a user and an application having restricted access to the file.

29. (Original) The method of claim 20, further comprising:

extracting semantic information for the objects; and

storing the semantic information.

30. (Original) The method of claim 29, further comprising:

receiving a request for information stored in the file system; and

searching the semantic information to identify any files stored in the file system that meet the request.

31. (Original) The method of claim 30, wherein the semantic information includes one or more types of semantic information comprising content-based semantic information related to

the contents of files stored in the file system, context-based semantic information related to user access patterns of the files stored in the file system, and property semantic information related to statistics or descriptions of the files stored in the file system.

32. (Original) The method of claim 31, wherein searching the semantic information comprises:

searching a plurality of the types of semantic information.

33. (Original) The method of claim 31, further comprising:

returning results of the search using a precision variable, wherein the precision variable is related to a relevance of search results to the search request.

34. (Original) The method of claim 30, further comprising using one or more of a placement algorithm and a caching algorithm for placing or caching related objects in the file system.

35. (Original) The method of claim 29, further comprising:

identifying one or more files in the file system to be archived based on the semantic information associated with the one or more files; and

archiving the identified files.

36-39. (Canceled).

40. (Previously Presented) A file system, comprising:

storage means for storing a plurality of files, semantic information for the plurality of files and relation meta data identifying relationships between one or more of at least some of the plurality of files and between the plurality of files and the semantic information, wherein

a data model represents the relationships and the data model comprises a first object identifier identifying a first object wherein the first object includes a file of the plurality of files, a second object identifier identifying a second object wherein the second object includes one of a second file of the plurality of files and semantic information for the first file, and a relation identifier identifying a relationship of the relationships between the first object and the second object;

wherein the system further comprising event means for determining whether a file of the plurality of files is accessed, identifying a predetermined condition associated with the file, and performing an action in response to the predetermined condition existing.

41. (Original) The system of claim 40, further comprising extraction means for extracting the semantic information from the plurality of files.

42. (Canceled).

43. (Original) The system of claim 40, further comprising view means for generating a view of a file space where the plurality of files are stored based on user-related or application-related dependencies between at least some of the plurality of files.

44. (Original) The system of claim 40, further comprising search means for receiving a search request and for searching information stored in the storage means that meets the search request.

45. (Original) The system of claim 40 further comprising archiving means for archiving the files stored in the storage means.

(10) Evidence Appendix

"Merriam Webster Online Dictionary", downloaded December 17, 2008 from www.merriam-webster.com. Definition of "tuple". See attached Exhibit 1.

PATENT

Atty Docket No.: 200400677-1
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(11) Related Proceedings Appendix

None.

tuple

One entry found.

a On Off

Main Entry: **-tuple**
Function: *noun combining form*
Etymology: *quintuple, sextuple*

: set of (so many) elements —usually used of sets with ordered elements <the ordered 2-*tuple* (*a, b*)>

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